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## INTRODUCTION

- Patient education is an important aspect of oral health care.
- Infographics have emerged as an effective oral health education (OHE) medium.
- This study aimed to evaluate understandability and actionability of OHE infographics produced by the Ministry of Health Malaysia (MOH).

## RESULTS

- Understandability score of these infographics ranged from 50.0% to 100 % with a mean score of 92.5% (SD = 11.83%), while actionability score ranged from 0.0% to 100.0% with a mean score of 47.4% (SD = 48.26%).
- Some infographics were rated poorly in several understandability and actionability items.
- Low rating in understandability items was due to infrequent everyday language use (7 materials) and undefined medical terms (7 materials) (Table 1).
- Low rating in actionability items was due to absence of action to take (26 materials), not addressing user directly when describing action (26 materials), not breaking down action into manageable steps (30 materials), no practical element to take action (30 materials) and lacking visual aids to make instructions easier to act on (30 materials) (Table 2).

## DISCUSSION / CONCLUSION

- Action for user to take should be provided particularly on empowering them to improve oral hygiene practices.
- MOH OHE infographics were generally understandable but less actionable and could be improved by making refinements according to criteria of actionability items.

## MATERIALS AND METHODS

- Ethics approval: Medical Research Ethical Committee (MREC), MOH [Ref.: KKM/NIHSEC/P20-146 (6)].
- Fifty-four (54) MOH OHE infographics of various dental issues, such as adolescent oral health problems, deciduous dentition, dental abscess, dental caries, dental charges, dental erosion, dental treatment and fasting, dental veneer, diabetes and oral health, diet and oral health, early childhood caries, fluoride, fluoride varnish, gingivitis, halitosis, illegal dentistry, mouth cancer, mouthwash, oral health care for children, oral hygiene, permanent dentition, post dental extraction care, pregnancy and oral health, preterm birth and gingivitis, root canal treatment, sensitive teeth, smoking and oral health, stress and oral health, tooth avulsion, and toothbrush, were included in this study.
- These infographics, which were written in Bahasa Malaysia, were assessed by four raters consisted of two dental officers and two dental therapists with experience in providing patient education independently.
- The Bahasa Malaysia version Patient Education Materials Assessment Tool for Printable Materials, PEMAT-P(M) was used to determine understandability and actionability of these infographics by referring to PEMAT(M) User's Guide.
- All four raters demonstrated good level of agreement for majority of PEMAT-P(M) items. These raters met to discuss any discrepancies and reach consensus to obtain final rating of all PEMAT-P(M) items for each infographic, as practiced in the previous studies.

**Table 1: Rating of PEMAT-P(M) understandability items for MOH OHE infographics (n = 54)**

PEMAT-P(M) Understandability Item	Frequency (%)		
	Disagree	Agree	N/A
1 The material makes its purpose completely evident.	6 (11.1)	48 (88.9)	-
2 The material does not include information or content that distracts from its purpose.	5 (9.3)	49 (90.7)	-
3 The material uses common, everyday language.	7 (13.0)	47 (87.0)	-
4 Medical terms are not used or only used to familiarize audience with the terms. When used, medical terms are defined.	7 (13.0)	47 (87.0)	-
5 The material uses the active voice.	0 (0.0)	54 (100)	-
6 Numbers appearing in the material are clear and easy to understand.	2 (3.7)	0 (0.0)	52 (96.3)
7 The material does not expect the user to perform calculations.	0 (0.0)	54 (100)	-
8 The material breaks or "chunks" information into short sections.	0 (0.0)	0 (0.0)	54 (100)
9 The material's sections have informative headers.	0 (0.0)	0 (0.0)	54 (100)
10 The material presents information in a logical sequence.	3 (5.6)	51 (94.4)	-
11 The material provides a summary.	0 (0.0)	0 (0.0)	54 (100)
12 The material uses visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) to draw attention to key points.	0 (0.0)	54 (100)	-
15 The material uses visual aids whenever they could make content more easily understood (e.g., illustration of healthy portion size).	6 (11.1)	48 (88.9)	-
16 The material's visual aids reinforce rather than distract from the content.	5 (9.3)	49 (90.7)	0 (0.0)
17 The material's visual aids have clear titles or captions.	6 (11.1)	48 (88.9)	0 (0.0)
18 The material uses illustrations and photographs that are clear and uncluttered.	2 (3.7)	52 (96.3)	0 (0.0)
19 The material uses simple tables with short and clear row and column headings.	0 (0.0)	0 (0.0)	54 (100)

**Table 2: Rating of PEMAT-P(M) actionability items for MOH OHE infographics (n = 54)**

PEMAT-P(M) Actionability Item	Frequency (%)		
	Disagree	Agree	N/A
20 The material clearly identifies at least one action the user can take.	26 (48.1)	28 (51.9)	-
21 The material addresses the user directly when describing actions.	26 (48.1)	28 (51.9)	-
22 The material breaks down any action into manageable, explicit steps.	30 (55.6)	24 (44.4)	-
23 The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action.	30 (55.6)	24 (44.4)	-
24 The material provides simple instructions or examples of how to perform calculations.	0 (0.0)	0 (0.0)	54 (100)
25 The material explains how to use the charts, graphs, tables, or diagrams to take actions.	0 (0.0)	0 (0.0)	54 (100)
26 The material uses visual aids whenever they could make it easier to act on the instructions.	30 (55.6)	24 (44.4)	-

\*Item with "-" has no "N/A" or "not applicable" response; the PEMAT-P(M) items are presented in their original language (English).